

CLAIMS

1. A projector comprising: an illumination optical system emitting illumination light; a color-light-separating optical system separating the illumination light into three kinds of red, green, and blue light; electrooptical devices receiving the three kinds of color light separated by the color-light-separating optical system, converting them into corresponding kinds of light for forming images of the corresponding kinds of color light in accordance with image signals of the corresponding kinds of color light, and emitting them; a color-light-synthesizing optical system synthesizing the three kinds of color light emitted from the electrooptical devices; a projection optical system projecting the light synthesized by the color-light-synthesizing optical system; and polarizing plates disposed on the light paths of the corresponding kinds of color light between the corresponding electrooptical devices and the color-light-synthesizing optical system, and

the projector further comprising an optical element which adjusts the size of a projected image screen of at least one of the three kinds of color light extending along at least a predetermined direction so as to be nearly equal to those of the other kinds of color light extending along the predetermined direction and which is formed on and integrally with one surface of the corresponding polarizing plate so as to serve as an optical element for compensating chromatic aberration of magnification.

2. The projector according to Claim 1, wherein the parent material of the polarizing plate disposed on the light path of the red light is composed of glass or a light-transmissive resin, the parent materials of the polarizing plates disposed on the light paths of the green and blue light are composed of sapphire or quartz crystal, and the optical element for compensating chromatic aberration of magnification is disposed only on the light path of the red light.

3. A projector comprising: an illumination optical system emitting illumination light; a color-light-separating optical system separating the illumination light into three kinds of red, green, and blue light; electrooptical devices receiving the three kinds of color light separated by the color-light-separating optical system, converting them into corresponding kinds of light for forming images of the corresponding kinds of color light in accordance with image signals of the corresponding kinds of color light, and emitting them; a color-light-synthesizing optical system synthesizing the three kinds of color light emitted from the electrooptical devices; a projection optical system projecting the light synthesized by the color-light-synthesizing optical system; and angle-of-view compensating films disposed on the light paths of the corresponding kinds of color light between the corresponding electrooptical devices and the color-light-synthesizing optical system, and

the projector further comprising an optical element which adjusts the size of a projected image screen of at least one

of the three kinds of color light, extending along at least a predetermined direction, so as to be nearly equal to those of the other kinds of color light extending along the predetermined direction and which is formed on and integrally with one surface of the corresponding angle-of-view compensating film so as to serve as an optical element for compensating chromatic aberration of magnification.

4. The projector according to any one of Claims 1 to 3, wherein the optical element is a lens element or a prism element.

5. The projector according to any one of Claims 1 to 4, wherein, when the optical axis of the projection optical system is shifted in parallel to at least one of two directions mutually perpendicular to the system optical axis, the optical axis of the optical element for compensating chromatic aberration of magnification is shifted in parallel to the foregoing direction, following the shift of the optical axis of the projection optical system.

6. The projector according to Claim 5, wherein an amount of the parallel shift of the optical axis of the optical element for compensating chromatic aberration of magnification is the same as that of the parallel shift of the optical axis of the projection optical system.

7. The projector according to Claim 5, wherein an amount of

the parallel shift of the optical axis of the optical element for compensating chromatic aberration of magnification is smaller than that of the parallel shift of the optical axis of the projection optical system.

8. The projector according to any one of Claims 5 to 7, wherein the color-light-synthesizing optical system is a cross-dichroic prism having two kinds of dielectric multilayer films formed along the interfaces of four rectangular prisms in an approximate X-shape.

9. The projector according to Claim 8, wherein, when the optical axis of the projection optical system is shifted in parallel to an axial direction parallel to the line of intersection between the two kinds of dielectric multilayer films, a direction of the parallel shift of the optical axis of the optical element for compensating chromatic aberration of magnification is the same as that of the parallel shift of the optical axis of the projection optical system.

10. The projector according to Claim 8, wherein, when the optical axis of the projection optical system is shifted in parallel to an axial direction perpendicular to the line of intersection between the two kinds of dielectric multilayer films and to the system optical axis, a direction of the parallel shift of the optical axis of the optical element for compensating chromatic aberration of magnification, compensating color light passing through the two kinds of

dielectric multilayer films, is the same as that of the parallel shift of the optical axis of the projection optical system, and a direction of the parallel shift of the optical axis of the optical element for compensating chromatic aberration of magnification, compensating color light reflected at any one of the two kinds of dielectric multilayer films, is opposite to that of the parallel shift of the optical axis of the projection optical system.

11. The projector according to any one of Claims 1 to 10, wherein the optical element has no refraction feature on a plane extending orthogonal to the predetermined direction and including the generating line thereof and has a refraction feature on a plane extending orthogonal to the generating line thereof.